NRCS Natural Resources Conservation Service

FOREST TRAILS AND LANDINGS

Conservation Practice Job Sheet *NH-655*

Eroding forest trails reduce site productivity and cause water quality problems.

Stabilized trails improve water quality and increase property values.

Definition

Forest trails and landings are routes, travelways, or cleared areas within a forest to provide access on a periodic basis. They are often steeper than permanent access roads and traffic may be limited or eliminated upon completion of logging or other use.

Purpose

Forest trails and landings are used to:

- Provide access to forest stands for management, removal and collection of forest products and recreation.
- Minimize on-site and off-site damage to resources during periods of access by controlling erosion during construction, during use, and upon completion of use.

Use

Forest trails are used on forested areas where permanent access roads are not needed. They are not appropriate within streamside filter strips or immediately adjacent to water bodies except where needed for crossing. Landings are used for temporary storage of forest products until they are removed from the site.

Wildlife Considerations

Abandoned trails and landings offer an opportunity to provide additional wildlife food plots, bugging areas for birds, and shrubs for food and nesting cover. Areas selected for wildlife plantings include log landings, and gently sloping sections of trails where the soil is suitable for establishing vegetation with normal farming practices.

Criteria

Forest trails and landings usually require structural measures to manage runoff and vegetative treatment to reduce soil erosion and sedimentation. Water flows must be controlled using techniques such as outsloping, rolling (broad-based) dips, water bars, and rock plunge pools. Culverts and timber bridges may be used for stream crossings. Cut and fill slopes and the travel surface must be stabilized with appropriate vegetation or material. Trails that do not concentrate water and have adequate cover usually do not require treatment. New plantings must be protected from traffic with some form of use exclusion.

Rolling (Broad-based) Dips

Broad-based dips are shallow, wide diversions usually constructed on trails having a gradient of 10 percent or less. The bottom of the dip will be outsloped at least 4 degrees and extend the full width of the roadway (see diagram below). The dip and reverse grade section may require bedding with 3 inch crushed stone in some soils for stability to prevent rutting, and on slopes greater than 8%.

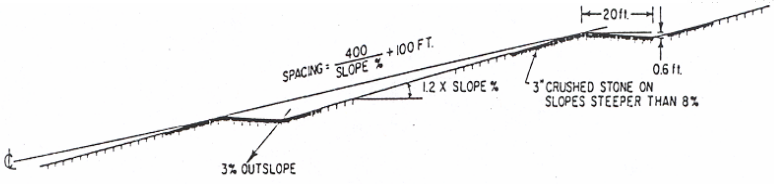
Water Bars

Water bars can be used on trails up to 25 percent grade and should be installed at a downslope angle of 30 degrees or less depending on the grade of the trail. Steeper trail grades require less downslope angle. The outlet of the water break should be open to prevent water from accumulating, and be protected by a buffer or filter zone of undisturbed forest floor to clean the sediment out of the water and prevent erosion. When the site does not provide adequate outlet protection, additional practices such as plunge pools will need to be considered. Water bars and broad-based dips should be spaced according to the following table as outlet conditions allow.

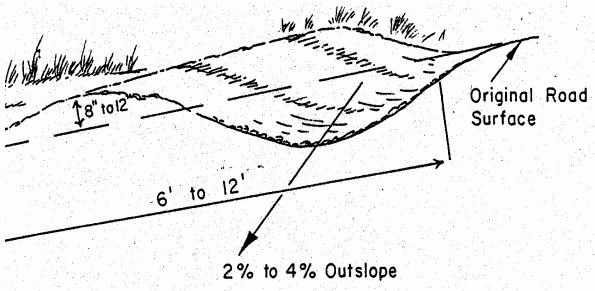
Road Grade (percent)	Approx. distance between water bars (feet)	Approx. distance between rolling dips (feet)
1-2	250	500-300
3-4	200-150	300-200
5	135	180
6-10	100-80	170-140
11-15	80-60	N/A
16-20	60-45	N/A
21+	40	N/A

Operation and Maintenance

Upon completion of logging, temporary measures should be eliminated or replaced with permanent bars, trails properly graded and outsloped if needed, and the entire disturbed area seeded following the recommendations on the attached specifications sheet. Trails should be inspected during the establishment period to ensure that drainage systems and structures for water control are properly functioning and that vegetation has attained full coverage.



DESIGN OF A BROAD BASE DRAINAGE DIP



SHALLOW WATER BREAK

Forest Trails and Landings - Job Sheet

For:	***Farm #:***
Field(s):	***Tract #:***
Designed By:	***Approved By:*** ***Signature:***
Date:	***Date:***

Purpose	
□ Forest Management	□ Wildlife Habitat
□ Logging	□ Erosion Control

Layout and Dimensions		
Water Bars: No.: Spacing:		
Broad-based (Rolling) Dips: No.: Spacing:		
Bridges: No.: Type & Size:		
Culverts (> 15" and <24"): No.: Type & Size: Spacing:		
Outlet Protection Structures: No.: Type & Size:		
Road/ Trail - Cut Slope	Road/ Trail - Surface	Road/ Trail - Fill Slope
Width (Height): Length:	Width: Length:	Width: Length:
Total Length (ft):	Average Width (ft.):	Total area (ac) or 1000Ft.^{2}
Additional location and layout requirements:		
If Permit or Review is required, has it been obtained? Y or N		Permit No.

Questions regarding the planting or maintenance of the buffer planting should be directed to _____, at _____.

Plant Materials Info (Refer to NH Standard 342 for appropriate species, or NH BMP Forest Harvest Manual)					
Species	Seed lbs./ac. or lbs./ 1000Ft.^{2}	Lime Lbs./ac. or lbs./ 1000Ft. ^{2}	Fertilizer lbs./ac. or lbs./1000Ft.^{2}	Mulch lbs./ac. or lbs./1000Ft.^{2}	Planting Dates
Erosion Control					
1.					
2.					
Wildlife					
1.					
2.					

Site Preparation
Planting Method (s)
Broadcast_____ Drilled_____
Maintenance Requirements – Check as Appropriate
Water Bars Functioning_____ Trails Outsloped_____ Inspect Periodically_____ Trails Properly Graded_____ Vegetation Established_____ Access Limited_____

Forest Trails and Landings – Job Sketch

If needed, an aerial view or a side view of the trails and landings, including location of water control structures, a direction arrow and other relevant information and complementary practices may also be included.

Scale 1" = _____ft. (NA indicates sketch not to scale: grid size ½" by ½")

Additional Specifications and Notes: